

Claims: I claim :

1. A dual layer non-halogen protective sheath for cables comprising:
 - (i) an outer intumescent polymer layer as means for providing thermal, fire, physical and mechanical protection; and
 - (ii) an inner polymer layer as means for providing a second level of flame protection.

2. The protective sheath defined in claim 1 wherein the outer layer contains a polypropylene or polypropylene copolymer as the base resin.

3. The protective sheath defined in claim 1 wherein the intumescent material of the outer layer is an activated polyphosphate or a melamine phosphate or a melamine pyrophosphate alone or admixed with about an equal quantity of melamine resin.

4. The protective sheath defined in claim 3 wherein the intumescent materials are in about 5 to about 100 parts by weight contained in 100 parts by weight of the polypropylene or polypropylene copolymer resin.

5. The protective sheath defined in claim 1 wherein the outer layer is of a predetermined thickness to provide sufficient thermal protection to the flame retarded inner layer whereby the combination substantially prevents flame spread in cable constructions.

6. The protective sheath defined in claim 1 wherein the inner layer is a non-halogen extrudable composition of (a) a copolymer of ethylene and an unsaturated ester comonomer of :
 - (i) a vinyl carboxylate
 - wherein (A) the carboxylate group has 2 to 5 carbon atoms;
 - (B) the copolymer is, optionally, modified with an anhydride of an unsaturated aliphatic diacid having 4 to 10 carbon atoms;
 - (C) the copolymer has an ester content in the range of about 15 to 40 percent based on the weight of the copolymer and a melt index in the range of about 2 to about 25 grams per 10 minutes; and , for each 100 parts by weight of component (a), and
 - about 100 to 250 parts by weight of magnesium hydroxide, coated or uncoated.

7. The inner layer defined in claim 6 wherein the unsaturated ester comonomer is vinyl acetate.

8. A plenum or riser cable comprising a metal core conductor and at least one layer surrounding the core comprising the dual layer non-halogen protective sheath defined in claim 1.

9. A dual layer non-halogen coated wire construction comprising :

(i) a intumescent outer polyolefin layer as means for providing thermal, fire, physical and mechanical protection; and

(ii) an inner polyolefin layer as means for providing electrical insulation and fire and corrosion protection for the construction.

10. The wire construction defined in claim 9 wherein the outer layer is an extrudable composition consisting essentially of :

(a) a polypropylene or polypropylene copolymer

(b) intumescent material that is an activated polyphosphate or a melamine phosphate or a melamine pyrophosphate alone or admixed with about an equal quantity of melamine resin.

11. The wire construction defined in claim 10 wherein the intumescent materials are in about 5 to 100 parts by weight contained in 100 parts by weight of the polypropylene or polypropylene copolymer.

12. The wire construction defined in claim 9 wherein the outer layer is of a predetermined thickness to provide sufficient thermal protection to the flame retarded inner layer whereby the combination substantially reduces flame spread along the construction.

13. The dual layer non-halogen coated wire construction defined in claim 9 wherein the inner insulating layer is formed of a polypropylene or polypropylene copolymer and contains sufficient acid neutralizer to prevent conductor corrosion.

14. The inner insulating layer defined in claim 13 wherein the acid neutralizer is magnesium or calcium hydroxide.

15. The acid neutralizer defined in claim 13 is in about 0.5 to 50 parts by weight contained in 100 parts by weight of polypropylene or polypropylene copolymer.

16. A building wire comprising a metal conductor protected against fire and corrosion by the dual layer defined in claim 9.

17. An automotive primary wire insulation comprising a metal conductor protected against fire and corrosion by the dual layer defined in claim 9.